KakaoTalk meets the ministry of education:

KakaoTalk meets the Ministry of Education: Mobile Learning in South Korean Higher Education

Keywords

South Korea, mobile learning, higher education, smart learning, seamless learning, Asia Pacific, mobile media, TEL, ICT, digital education, KakaoTalk, texting, lifelong learning

Author

Dr. Michael S. GALLAGHER, University College London, gallagher.michaelsean@gmail.com

He is Assistant Professor at Hankuk University of Foreign Studies in Seoul, South Korea and Director of Panoply Digital, a consultancy dedicated to mobile for development (M4D). His research focus is on mapping the effects of mobility and mobile technology on open spaces, built environments, and urban spaces to support practice in the humanities in higher education, particularly in the Asia Pacific region.

Abstract

Mobile learning in South Korean higher education is bound in problematic tension between a top-down model of smart learning in the formal space and the sophisticated use of mobile technology and social media in the informal space, use that directly affects the nature and structure of formal disciplinary participation. The aim of this chapter is to explore this tension by providing an overview of the state of mobile technology use in higher education in South Korea, and how that use is in part governed by the informal mobile cultures and practices that have arisen amidst domestically produced mobile technology and mobile applications.

Introduction: South Korean Higher Education & Mobile

The Republic of Korea (South Korea) presents a rich environment for investigating mobile learning in higher education. It is a nation with a passionate educational legacy evidenced by 67.7% of 25-34 year olds obtaining some form of tertiary education (OECD, 2014) coupled with a robust local mobile industry, evidenced by mobile manufacturers such as Samsung and a sophisticated domestic mobile ecosystem. It is a nation where economic and educational volatility is being threatened by a vastly diminishing birthrate-at 1.21 children per woman, the lowest in the OECD-(2014), whose higher education is reconfiguring as a result, and where technological alternatives are being pursued and implemented in response.

Higher education in South Korea is itself a sophisticated orchestration of historical, philosophical, and sociocultural factors. This orchestration is heavily influenced by the historical legacy of South Korea, a nation which has existed in proximity to, been subjugated by, and emerged independently from two neighboring countries. From China, South Korea has adopted Confucianism and drawn from it a highly structured social order which informs much of the structure of higher education itself; from Japan, South Korea identified economic and development models that allowed it to emerge from devastation at the end of a brutal war. Since 1910, Korea has gone from Confucian kingdom to Japanese colony to free state to divided state to civil and proxy war, poverty, rapid industrialization, and to its current manifestation as economic power.

With such rapid change comes considerable tension, and much of this can be found in the South Korean higher education system, itself an amalgamation of Korean tradition and

Western organizational models (Park & Weidman, 1999): Korean in socialized and philosophical practice; Western in terms of disciplinary structure and university organization. Korea has a long history with higher education; the establishment of "Taehak" in 372 A.D (Ministry of Education, 2016) represents the earliest forms of formal education with a curriculum focused on ethics education, and Sungkyunkwan University, in existence to this day, established as a Confucian center of learning in 1398. These indigenous Korean seats of learning were challenged as a result of the national and private schools being introduced in the late 19th century by Christian missionaries and members of the independence movement. Several universities subsequently emerged built on Western models of higher education, but Japanese occupation (1910-1945) limited further development; post-liberation (1945) and post-Korean War (1953) is where we see considerable expansion of the higher education system.

As such, the South Korean higher educational model is a complex orchestration of foreign organizational models built on Korean philosophical and sociocultural foundations. While caution must be applied in overemphasizing the dichotomy of Eastern (typified here by South Korea) and Western (typified here by the UK) learning and practice, particularly due to their significant overlap and undertheorized nature (Ryan & Louie, 2007), differences remain. Students in higher education live in this space of Eastern and Western overlap.

Further pressure is being placed on South Korean higher education through consolidation as universities are closing based on the diminishing pool of students, the consequence of a declining birthrate. Eleven universities were closed between 2000-2014 out of a total of 220, with a further 47 universities having merged with 41 other universities (Korean Council

for University Education, 2016). A further eleven universities have had their access to government funding curtailed making their closure possible if not likely (Chosun.com, 2016). According to the Ministry of Education's Policy Office report (2016), there is the expectation that by 2018 university entrance quotas will outstrip the number of eligible high school graduates, a divide that will continue to accelerate (by 2024 this divide will be 30% greater than it was in 2014). The Ministry of Education has suggested that this will devastate the nation's higher education system as it currently stands. Measures to combat this decline include reduction in university entrance quotas (reduced by 47,000 from 2014-2016), a boosting of competition between higher ranked universities, and radical reform (which may include consolidation with other universities or outright closure) for those lower-ranked universities, which total 66 in number. The Ministry of Education as part of this reform has focused on projects designed to invigorate higher education, including new projects to customize talents for social and business demand, evolving from the slogan: "We will cultivate talent that society wants". These include many of the instances of mobile learning described later in this chapter.

If higher education in South Korea is consolidating as a result of declining birthrates and shifting policy priorities, their domestic mobile industry and mobile consumption are certainly not. With a technological infrastructure on par with any nation in the world, where 40% of its population enjoy a high speed, fixed Internet connection; and where there are over 111 mobile subscriptions per 100 people, South Korea enjoys an almost complete saturation of connectivity (ITU ICT, 2015). It is an environment of increasing mobility as mobile traffic accounts for 29% of all web traffic (We Are Social, 2015). With 30% of the South Korean population actively using social media and 27% of the entire population doing

so through mobile (2015), there exists a rich environment for observing mobile learning. Along with this connectivity comes with it a local capacity for digital software, applications, and social media environments; South Koreans are accustomed to using technologies and applications developed in and for South Koreans. Further, they are used to using them at an early age as the following quote suggests:

> "…80.6% of Korean adolescents have their own mobile phone (compared to Japan, 77.3%; Mexico, 64%; China, 48.9%; and India, 30.6%). In particular, Korea shows a higher penetration rate among younger groups: 87.7% of 12-year-old Korean adolescents already use mobile phones, which far surpasses other countries (Japan, 50%; Mexico; 45.1%; China, 27.7%; and India 11.6%)" (Ok, 2011).

Along with this early access comes subsequent negative implications (smartphone overuse as discussed in Lee et al., 2014), but also an array of mobile, media, and digital practices that present unique sociocultural characteristics. It is also from environment that we begin to see sophisticated instances of informal mobile learning, of long-standing (since the 1990s) and iterative informal mobile learning communities and of idiosyncratic South Korean communicative practices. Mobile technology sits at the nexus of these community memberships as South Korean university students use it to manage relationships and identities across the layers upon layers of activity that these memberships demand. Upon entering South Korean higher education, these students have developed and honed practices over a course of years that makes this management possible. South Korean higher education, in response to the demands of consolidation, have developed formal policy for the appropriate use of ICT, including mobile technology, in a larger ecosystem of smart

learning, discussed further in this chapter. The informal meets the formal, problematically, through mobile technology.

Method

The methods employed for this thesis include desk research, particularly an analysis of pertinent policy documents from the Ministry of Education in South Korea, demographic information from the Korean Statistical Information Service (KOSIS), as well as research on informal mobile learning communities and cultures in South Korea (most notably in Hjorth (2009a, b, 2008), Yoon (2003), and Ok, 2011). This desk research was conducted specifically to ascertain how the evolving higher educational landscape, one consolidating as a result of low birthrates, is affecting the ICT and mobile learning efforts of South Korean universities, and how those efforts cohere or conflict with informal mobile learning communities at work in larger South Korean society.

Further methods draw on, but do not directly reference, qualitative research conducted by the author on mobile learning in the humanities in South Korean higher education. Specifically, select findings emerge from qualitative studies conducted by this author in 2013-2015 with graduate students in South Korean universities to determine the informal mobile learning communities in which they participate and how that mobile activity shaped participation in their university discipline. The author is affiliated with a South Korean university as an Assistant Professor, although none of the findings presented in this chapter emerged from data taken from the author's own students.

Current State of Mobile Technology use in South Korea: The Formal

Partly as a result of the consolidation required by a diminishing pool of university age students, partly as a result of policy directed towards educational competitiveness, and partly as a result of the sheer ubiquity and performance of an ICT infrastructure, higher education in South Korea is experiencing rapid transformation, a transformation that directly affects the state of mobile learning in universities.

The Ministry of Education (MOE) has contributed explicitly to this process both in terms of policy and infrastructure; in 2015, the MOE support for bandwidth equated to approximately 10.5% of its entire budget (KERIS, 2015, p. 109). For education, this saturation of broadband access, ICT, and mobile technology has produced an environment where educational policies and programs developed around this technology are part of a larger interrelated whole. This whole generally falls under the aegis of the preferred nomenclature of the MOE, smart learning, adopted in South Korea by the precursor to the MOE, the Ministry of Education, Science, and Technology (MEST), in 2011 to support digital textbook development and application, online education, open educational resources and content, online assessment; to strengthen information and communication, teacher's use of ICT, and more (Kwon et al., 2013, p. 10).

Smart learning incorporates mobile technology as an ancillary technology in a larger learning system; it encapsulates the environment and culture of seemingly unlimited internet access and technological ownership that most South Koreans enjoy. Further, and perhaps most important to this chapter, all of these terms directly affect the use of mobile learning in

higher education. The objectives of higher education in South Korea, encoded in many government-sponsored directives and university curricula, have been redrawn in light of the perceived advantages of technology enhanced learning. These objectives include a nominal pedagogical shift towards constructivist education and collaborative learning and the employ of technology to enact these shifts, including blogs, wikis, and social media (Pang, 2012). Yet, the South Korean smart learning model still assumes, even centralizes, measures of institutional or instructional control. It also represents positions juxtaposed from the evolving UK & European models where shifts away from technologically deterministic positions of mobile learning have been adopted.

In the formal space of Korean higher education, mobile technology serves a largely supportive role, a role that is contrasted to the central role of mobile technology in the informal space. Mobile learning as positioned in this larger ICT environment in higher education generally ascribes to the following distinctions.

Support for Smart Learning: Mobile as Node in a Larger Technological System.

Much of this type of mobile activity is directed at providing a seamless learning experience through making instructional content available through mobile technology. In this instance, mobile technology plays a supportive role as a means of accessing content and performing administrative duties, rather than for socialized interaction or peer-based learning. Mobile learning as positioned here involves accessing video lectures, course materials, and lectures. Relevant examples of this approach include leading science institutes such as the Korea Advanced Institute of Science and Technology (KAIST), Ulsan National Institute of Science and Technology (UNIST), and Korea National Open University (KNOU), as well as universities

dedicated to online education: Seoul Digital University, Hanyang Cyber University, and so forth (Choi, Woo & Jung, 2013).

Support for Cyber Universities

Continuing from this smart learning distinction are the digital and cyber universities themselves, terms that South Korea uses for their universities which are exclusively or predominantly online; these are also referred to as distance education universities as per the Higher Education Act of South Korea (MEST, 2009). There are 19 cyber universities in South Korea (as of September 2015), all bound to the Higher Education Act and thus Ministry of Education oversight. These cyber universities have grown modestly since their inception in the early 2000s, despite general reservations about the quality or equivalency of the education offered compared with more traditional universities (detailed in Choi, Woo & Jung, 2013).

The largest distance education university is Korean National Open University (KNOU) which currently enrolls over 130,000 in a blended learning environment that serves mostly adults in their thirties or older (89.9% of the entire student population). As these universities are major stakeholders and participants in the smart learning projects encouraged by the MOE, mobile technology plays a supporting role in their education, limited mainly to course content and administrative functions. Some cyber universities have attempted to shift the entirety of their learning management systems (LMS) to mobile "campuses" where interactivity included attending online courses, posting questions, checking messages, and monitoring academic calendars. As such, we see a potential expansion of mobile technology's role in the learning process in higher education. However, difficulties have

been met from students who choose not to adopt the mobile learning system based on complexity and a general social resistance (detailed in Han & Han, 2014); mobile acceptance in higher education, and the methodologies designed to measure that acceptance, have been a popular research thread (discussed in the broader mobile sense in Ho Cheong & Park, 2005 and specifically to mobile learning in higher education in Park, Nam, & Cha, 2012).

Open Courseware and Open Learning Support

South Korean higher education has invested in the development of Korea Open CourseWare (KOCW), modeled on MIT's open courseware, which is designed to utilize lectures and lecture data that Korean universities have made openly available. "It is an open knowledge resource hub that can collect, distribute and utilize high quality lecture contents diffused through universities in collaboration, and attempts to correspond to the flow of Open Educational Resources (OER) that is unfolding worldwide" (KERIS, 2015, p. 111). Mobile technology in this instance is used to support these efforts by providing media support services for the content and courseware, and by composing location-specific automated feedback systems to activate lecture openings. Furthering this trend towards open learning are K-MOOCs, which as the name suggests are Korean Massive Open Online Courses; they are designed to bridge higher education with MOE lifelong learning initiatives as well as private enterprise by promoting recruitment links between students and companies in Korea (MOE, 2016). These MOOCs are designed to supplement existing curriculum and will become credit earning degree courses in 2017. Mobile technology in this instance mirrors its use for KOCW as it is used to provide media support services for the course content.

Socialized Pedagogy: Direct collaboration through texting:

Although rare in the larger research canon, some experimentation has taken place using instant messaging as a means of socialized collaboration for formal learning, experimentation that proves directly applicable to the focus of this chapter and its exploration of the disconnect between formal mobile learning and informal mobile learning in South Korean higher education. Kim, Lee, & Kim (2014) detail a study of 48 students in three classes from a large private Korean university enrolled in a required introductory educational technology course using mobile messaging groups, computer-based instant messaging applications, and bulletin board applications, respectively, for course communication. The findings suggest distinctions need to be drawn between teamwork (the process of learning to work together) and taskwork (the process of completing required course activities) in the use of a particular ICT or mobile application.

A further distinction is drawn by this author in the following discussion of the informal mobile learning space in South Korea, noting that socialized activity (what Kim, Lee, & Kim might refer to as teamwork) has enjoyed a long history in mobile technology in South Korea; university students have many years of experience in managing and engaging in their many socialized communities through mobile technology before stepping foot on a university campus. This experience, this author argues, is ultimately neglected by universities in their attempts to position mobile technology as a node in a larger smart learning system, a supplementary tool in a larger daisy chain of technologies. For the students themselves however, in their informal learning interactions and socialized practices, mobile technology reigns supreme.

Close-Knit Peer Relationships in Mobile Technology: The Informal

Informal mobile learning in South Korean higher education itself emerges from a mature, dynamic, and often retraditionalized (Yoon, 2003) mobile field of activity. It is from this mature technological South Korean context that mobile practices are retraditionalized-filtered through South Korean sociocultural practices (Yoon, 2003)-and where the tension emerges in the formal mobile learning context discussed in the previous section, where pronounced levels of institutional or instructional control are at odds with or inhibit the practices emerging from this informal context.

As previously discussed, South Koreans enjoy a technological infrastructure on par with any nation in the world, where 40% of its population enjoy a high speed, fixed Internet connection; and where there is an almost complete saturation of connectivity (ITU ICT, 2015). Along with this connectivity comes with it a local capacity for digital software, applications, and social media environments; South Koreans are accustomed to using technologies and applications developed in and for South Koreans. This mobile connectivity and infrastructure, largely available since the late 1990s, has stimulated the development of informal mobile communities developing a series of informal learning practices, practices that have evolved into their present instance and which inform the formal learning of South Korean university students.

To begin were "*eomjijok*", or thumbtribe groups, which can be seen as a representation of early (late 1990s to late 2000s) Korean mobile culture. According to Ok (2011), these are South Koreans who have exceedingly swift texting skills that are used to communicate in an

idiosyncratic code language, designed specifically to be understood by members of that group (or tribe) only. Jouhki (2008) and Shim et al. (2008) expand on the idiosyncratic practices that emerged from these groups, from political participatory culture to informal social communication to gender-based participation and social gaming practices in mobile communities. Many, if not most, of the early analysis of these *eomjijok* cultures were centered on their "distinctive cultural identity" and "their significance in the transformation of Korean society", or an attempt to "sustain individualism against the traditionally collectivist Korean culture" (Ok, 2011). *Eomjijok's* significance as it applies to this chapter is their illustration of the existence of informal practices that sit aside and problematize the formal modes of communication and learning encapsulated in the smart learning configurations discussed earlier in this chapter. Yet, this *eomjijok* culture, despite failing to maintain its idiosyncratic "youth culture" exclusivity as smartphone usage has saturated the South Korean market, provides a template from which to observe and identify informal and learning practices emerging from the South Korean mobile context.

There is considerable overlap between these *eomjijok* communities and the social media cultures that emerged both in the apex and the wake of *eomjijok*. The sociocultural characteristics of that social media use reflect a particular approach to engaging with mobile and social media that affects mobile learning in higher education to this day (Kim et al., 2011). Korean social networks tend to be much smaller than their UK or US counterparts and their motivations for participation (social support, some information seeking, less casual relationships) speak to a close-knit social network that reinforces the material peer communities (2011). By way of example, Hjorth (2009b) documents the community practices emerging from Cyworld's "mini-hompy" (a portmanteau of miniature and

homepage); Ok (2011) discusses the "cute aesthetics" of Cyworld as a means of encouraging "migratory practices across interconnected digital media spheres" (Hjorth & Kim, 2005) as well as the development of jargon specific to Cyworld use *(Cying*=doing Cyworld, etc.).

Social media, like mobile technology, "reconfirms young people's peer networks, which continue traditional modes of sociality and cultural identity" (Ok, 2011), a stance that Yoon's (2003) concept of retraditionalizing would affirm and qualify; retraditionalizing involves the idea that mobile technology, or indeed any new technology, generates activity that is localized to make it aligned with non-digital communicative practices. South Korean mobile culture presents a unique mix of the individualized filtered through socialized practice.

Blogs represented a significant portion of the activity taking place in mobile environments among university students in South Korea, with over 40% of the entire Korean population operating a blog and over 20% contributing to blog-based discussion forums (Global Web Index, 2011). Yet, it is important to note the particular purpose that blogging takes in the South Korean context as a socializing rather than as a participatory or intellectual activity as made evident by Ok (2011) in the following passage:

> "While blogs are considered to be a private space compared to the more public-oriented online communities, young people use blogs primarily "to build and maintain social relationships" rather than to engage in "journalistic or participatory activities" (Kim, J.Y., 2006)."

These blogging services have faded in use and importance, but they provided an environment where South Koreans were able to more fully develop digital informal and socialized practices, practices that have since transferred to other services. As of 2015, social media use has migrated to mobile messaging applications like KakaoTalk (at 39% of total activity), Facebook Messenger (17%), and Naver's Line (9%) (We Are Social, 2015). This shift to messaging applications suggests a parallel shift to the informal practices contained therein, what Park (2013) might refer to as the reproduction and negotiation of practices and expectations, specific to the textual medium. As Park suggests this shift is familiar as "the original invention and popularization of the medium as well as the habitus that preceded it is still present in the memories of many participants within the new texting habitus" (2013); in the South Korean context, this shift is especially familiar as it represents a reversion to many of the practices found in *eomjijok* cultures: idiosyncratic language and emoji acting as code, blogs as diaries and platforms for mobile media, and media as community and communicative artifact. These informal practices have spanned the *eomjijok* cultures of the late 1990s to the present day.

One such application is KakaoTalk, a mobile messaging application that enjoys predominate market share. KakaoTalk is the dominant social media application and environment in South Korea at 39% of all social media countrywide (We Are Social, 2015), assuming the position vacated by Cyworld, which peaked at 25 million active users-approximately half the country's entire population-in 2011 (Digital in the Round, 2013). The concentration and frequency of KakaoTalk's use is staggering: 27.5 million users sending 420 million messages daily, which translates to 43 minutes and 150 messages daily for each user (Yonhap News,

2012 taken from Jin & Yoon, 2014). It advances the long South Korean tradition of social media use discussed earlier in this chapter.

KakaoTalk is deeply integrated into South Korea socialized practice, both informal and formal, activated through mobile technology; it is used by university students to maintain participation across informal and formal communities. It adapts many of the design features from earlier iterations of South Korean social media discussed earlier in this chapter, particularly as it relates to Cyworld's personal messaging narrated and presented to a close-knit network (Hjorth, 2009b) and the "cute aesthetics" of Cyworld (Ok, 2011) as a means of encouraging "migratory practices across interconnected digital media spheres" (Hjorth & Kim, 2005). KakaoTalk is designed to maintain close-knit networks through digital communication that enhances connections across a range of communication channels: every sticker picture, emoticon, and filtered avatar ("cute aesthetics"), every game played collaboratively, every chat detailing the activities and observations of the day (a personal narration), and every movement between one community to another ("migratory practices across interconnected digital media spheres"). KakaoTalk inexorably and implicitly links these communities, even encourages migration between them, by presenting them simultaneously in its interface. Once linked, KakaoTalk allows for maintenance of community participation across a myriad of media channels with little effort; every emoticon builds connection across informal communities and every screenshot of a lecture slide or audio recording of a group discussion builds camaraderie in formal, academic communities.

Security concerns stemming from a data breach that led to a migration of millions of users (detailed in Yang, 2014) suggest the ephemerality of KakaoTalk's dominant position in the flow of mobile activity in South Korea. Yet, KakaoTalk still stands dominant in the South Korean context as a means of managing multimembership through distinct South Korean practices (Yoon, 2003). It is not a node on a larger smart learning schematic, but rather at the nexus of learning itself, whether informal or formal.

This learning takes on distinct South Korean forms, undergoing a "retraditionalization" (Yoon, 2003) of South Korean practice. Yoon (2003) advances the idea that much of the idiosyncratic nature of this mobile learning are driven by uniquely Korean concepts, such as *jeong* (Korean: 정), defined as:

> "an expression of affective and attached relationships between people closely related to one another. *Jeong* is, on the one hand, based on an extended form of familism in that it emphasizes the strong attachment between close people within the network...Once someone begins to be considered as a member of the network, he or she is treated as family by other members and, in consequence, it becomes extremely difficult to keep away from the network…" (2003)

Jeong, as such, acts as a binding agent, a local sociality as described by Yoon (2003), governing or structuring social interaction that governs both informal and formal mobile learning. Further binding agents manifest formally in the disciplinary space in intricate "senior-junior" (Korean: 선배/후배, or *seonbae/hubae*) relationships that permeate higher

education; these are mentoring relationships between younger and older students in the same discipline where disciplinary practices are modeled and where a sociality is enforced. They move between mobile activity and non-digital activity routinely; they are occasionally resisted and contested in subtle acts of subversion (detailed in the author's own research in Gallagher, 2016).

These specific South Korean agents formalize many of the social practices emerging through mobile technology and, in turn, affect the shape of disciplinary participation, evident in the norms and importance of reciprocity:

> "The members in the friendship circle are subject to the obligation to accept as well as the obligation to reciprocate (Taylor & Harper, 2002). Text messages play a particularly important role in this sharing through the mobile by maintaining continuous connection…the continuous reciprocal ritual tends to strengthen the ties between members without intentional disconnection or 'chewing out', which refers to ignoring calls or messages from others." (Yoon, 2003).

Mobile technology intensifies this process by allowing for "individuals to maintain states of hyper-connection and hyper-awareness of others. That is, users can engage in multiple social communication networks at any moment, continually access the various levels and scales of multi-layered communication contexts" (Lee, D.H., 2012). Every KakaoTalk discussion with friends, family, with seniors, with juniors, with fellow classmates, or faculty, all sitting in close proximity on a mobile screen, are bound by these South Korean sociocultural bindings agents. To say that mobile technology is merely a node in this smart

learning system is erroneous; mobile technology is critical to participation in South Korean society in general and South Korean higher education specifically by allowing for the capacity to maintain relationships along the nexus of multimembership (Wenger, 1998).

Findings: The Intersect and the Tension in Mobile

These two fields of mobile learning activity, the formal and the informal, exist in states of overlap and tension. They are not mutually exclusive fields of activity, nor do they contain any particular attribute or set of attributes that presupposes the supremacy of one over the other. Rather, the tension discussed here is one of misalignment and a general misunderstanding of the role of mobile technology in the learning processes of university students. Formal mobile learning in Korean higher education, aside from limited research on socialized mobile learning using messaging applications (discussed earlier in Kim, Lee, & Kim, 2014), has yet to embrace or even fully employ practices or activities emerging from the informal mobile context as discussed in this chapter. Formal mobile learning is subsumed in this context in a larger smart learning system and, as such, moves to the periphery of technology enhanced learning (TEL)- a subset of a larger whole learning structure. While this presents material advantages-the efficient employ of abundant connectivity and ICT resources across higher education, for example- it implicitly negates the importance of mobile technology in learning in South Korea.

South Korean university students use mobile technology to manage their multimemberships and, in turn, manage their learning in socioculturally specific ways. The supporting role afforded mobile technology in a smart learning structure (as supplementary to cyber universities, open courseware, and open learning, as discussed earlier) contrasts

significantly with the paramount role afforded mobile technology by the university students using it. Formal mobile learning in higher education is hampered as a result, evidenced by the significant resistance to both smart learning and mobile learning in the research (discussed in Park, Nam, & Cha, 2012). Mobile learning in South Korean higher education is, essentially, siloed from this wellspring of mobile activity evidenced by South Korean university students in their informal activities; as such, it is positioned askance when initiated formally in universities. Formal mobile learning applications developed by universities to support particular aspects of learning or disciplinary participation pale in comparison to the range of activity, learning or otherwise, being supported in commercial applications such as KakaoTalk. In light of the structural shifts brought about by consolidation due to dwindling birth rates, there is opportunity for revisiting formal mobile learning, to develop pedagogies to support that mobile learning, and to do so in tandem with the informal activity made manifest in commercial mobile applications.

The Way Forward: Conclusion and Future Research

As discussed, mobile learning in South Korean higher education is bound in problematic tension between a top-down model of smart learning in the formal space and the sophisticated use of mobile technology and social media in the informal space, use that directly affects the nature and structure of formal disciplinary participation in higher education. This chapter explored this tension from the formal as a response to university consolidation and reorganization, and from the informal as a product of a mature and sophisticated mobile system of activity.

Further research is required to explore pedagogies that bridge formal and informal mobile learning, particularly in specific sociocultural contexts. This author believes that sociocultural practice dictates much of the success of any pedagogical approach, ICT-based or otherwise, and an effective bridge between formal and informal mobile learning would require sociocultural fidelity to lived South Korean practice. Further research is required to explore the nature of proximity in mobile learning and how that influences the mobile learner's understanding of community boundaries. In mobile messaging applications where much of this learning activity is taking place, text threads that span formal learning (faculty, senior-juniors, classmates) sit astride those for informal learning (family, friends, etc.). Practices are shared and presumably boundaries blur. Further research is needed to explore the role of this proximity in shaping participation in higher education.

Bibliography

Choi,H., Woo,Y. & Jung, H. (2013). Student's Perception of Smart Learning in Distance Higher Education. *The Journal of the Korea Contents Association*, 13 (10): 584-593. Retrieved September 6, 2016 from http://www.dbpia.co.kr/Article/NODE02369561.

Chosun.com (2016). "Ministry of Education Releases Report on Condition of Universities...Limits of Government Funds to Poorly Ranked Universities to Continue; Some Universities (Daegu Foreign Language University and Seonam University etc) at risk of closing." Retrieved September 10, 2016 from http://news.chosun.com/site/data/html_dir/2016/09/05/2016090502325.html.

Digital in the Round (2013). 'Social Media in South Korea: How Facebook Won Cyworld'. Retrieved September 2, 2016 from http://www.digitalintheround.com/south-korea-cyworldfacebook/.

Gallagher, M. (2016). Charting Trajectories on the Peripheries of Community Practice: Mobile Learning for the Humanities in South Korea. Unpublished doctoral thesis. University College London, Department of Culture, Communication and Media. Retrieved September 2, 2016 from http://michaelseangallagher.org/wp-content/uploads/2013/08/Gallagher_Thesis.pdf.

Han, I., & Han, S. (2014). Adoption of the mobile campus in a cyber university. The International Review of Research in Open and Distributed Learning, 15(6).

Hjorth, L. (2009a). 'Mobile media in the Asia Pacific: gender and the art of being mobile'. London: Taylor & Francis.

Hjorth, L. (2009b). 'Gifts on presence: A case study of South Korean virtual community, Cyworld's mini-hompy'. In G. Goggin & M. McLelland (Eds.), Internationalising the Internet. London: Routledge.

Hjorth, L. (2008). 'Being Real in the Mobile Reel: A Case Study on Convergent Mobile Media as Domesticated New Media in Seoul, South Korea'. *Convergence: The International Journal of Research into New Media Technologies*, 14(1), 91-104.

Hjorth, L. & Kim, H. (2005). 'Being There and Being Here: Gendered Customizing of 3G Mobile Practices – Through a Case Study in Seoul'. *Convergence: The International Journal of Research into New Media Technologies*, 11, 2005, 49-55.

Ho Cheong, J., & Park, M. C. (2005). Mobile internet acceptance in Korea. *Internet research*, 15(2), 125-140.

ITU ICT (2015). 'Internet connectivity and mobile subscription rates by country'. Retrieved September 1, 2016 from http://www.itu.int/en/Pages/default.aspx.

Jin, D.Y. & Yoon, K. (2014). 'Reimagining smartphones in a local mediascape: A cultural analysis of young KakaoTalk users in Korea'. *Convergence: The International Journal of*

Research into New Media Technologies, December 2, 2014. Retrieved September 2, 2016 from http://con.sagepub.com/content/early/2014/12/02/1354856514560316.abstract

KERIS (2015). White paper on ICT in Education Korea. Retrieved September 1, 2016 from http://english.keris.or.kr/es_ac/es_ac_210.jsp

Kim, H., Lee, M., & Kim, M. (2014). Effects of Mobile Instant Messaging on Collaborative Learning Processes and Outcomes: The Case of South Korea. *Educational Technology & Society*, 17 (2), 31–42.

Kim, H. H., Moon, J. Y., & Yang, S. (2004, January). Broadband penetration and participatory politics: South Korea case. Paper presented at the 37th Annual Hawaii International Conference on System Sciences. IEEE. Big Island, Hawaii. 5-8 January 2004.

Korean Council for University Education (2016). Closure and change through interdisciplinary university status. Retrieved September 2, 2016 from http://www.academyinfo.go.kr/UIPISA/html/egovframework/uipisa/uipnh/unt/ipsrch/Pop_mergeschool_tab02.html.

Korean Statistical Information Service (2016). Retrieved September 10, 2016 from http://kosis.kr/eng/.

Kwon, H. I., Kim, D. J., Ryu, G. J., Kang, J. H., Park, J. S., & Joo, H. Y. (2013). The Framework of the Smart Learning Infrastructure in South Korea-Focus on Agriculture Education System. In

Proceedings of Free and Open Source Software Conference (FOSSC-13), Muscat, Oman: February 18-19, 2013.

Lee, J., Cho, B., Kim, Y., & Noh, J. (2015). 'Smartphone addiction in university students and its implication for learning'. In G. Chen, V. Kumar, H. Kinshuk, & S.C. Kong (Eds.) Emerging Issues in Smart Learning. Berlin: Springer.

Ministry of Education (2016). Main Policy Report for Higher Education. Retrieved September 2, 2016 from http://english.mest.go.kr/enMain.do.

Ministry of Education, Science and Technology, Republic of South Korea, KERIS (2012). 'Adapting Education to the Information Age'. Retrieved September 1, 2016 from http://english.keris.or.kr/es_ac/es_ac_210.jsp.

Ministry of Government Legislation (2009). Higher Education Act. Retrieved September 2, 2016 from http://buff.ly/2cm1VfS.

OECD (2014). Fertility rates. Retrieved September 10, 2016 from https://data.oecd.org/pop/fertility-rates.htm.

OECD (2014). Population with Tertiary Education. Retrieved September 10, 2016 from https://data.oecd.org/eduatt/population-with-tertiary-education.htm#indicator-chart.

Ok, H. Y. (2011). 'New Media Practices in South Korea'. *International Journal of Communication*, 5, 320-348.

Pang, J. (2012). 'ICT Adapted South Korea Education: Today and Tomorrow'. South Korea, 2(2).

Park, D. K. (2013). 'Texting the New Habitus: (Re) producing and Negotiating Practices and Expectations of the Texting Medium'. Retrieved September 1, 2016 from http://digitalcommons.bard.edu/cgi/viewcontent.cgi?article=1232&context=senproj_s2013.

Park, S. Y., Nam, M. W., & Cha, S. B. (2012). University students' behavioral intention to use mobile learning: Evaluating the technology acceptance model. *British Journal of Educational Technology*, 43(4), 592-605.

We Are Social (2015). 'Digital, Social, and Mobile Worldwide 2015'. Retrieved September 1, 2016 from http://wearesocial.net/tag/statistics/.

Wenger, E. (1998). Communities of practice: Learning, meaning, and identity. Cambridge: Cambridge University Press.

Yoon, K. (2003). 'Retraditionalizing the Mobile Young People's Sociality and Mobile Phone Use in Seoul, South Korea'. *European Journal of Cultural Studies*, 6(3), 327-343.